

SUMMARY

The hip joint is a stable, major weight-bearing joint with wide range of motion in all directions. Hip pain is a common problem in patients of all ages. It can be attributed to many causes, such as osteonecrosis, transient osteoporosis or bone marrow edema, trauma with suspected occult fracture and stress fractures, labral tears, osteochondritis dissecans, tendon tears, septic arthritis, osteomyelitis, and other conditions common to all joints, such as bursitis, synovial Osteochondromatosis & inflammatory conditions.

Different diagnostic imaging modalities play an important role in the diagnosis and staging of femoral head lesions but due to high soft-tissue contrast resolution of MRI combined with recent technologic developments, it plays a crucial role in the assessment of epiphyseal disorders by demonstrating cartilaginous and osseous structures in great detail without the use of ionizing radiation, with or without contrast material injection.

The aim of this study was to evaluate the diagnostic value of MRI in assessment of non-neoplastic femoral head lesions.

This study included 40 patients, 22 females (55%) and 18 males (45%), their ages ranged from 4 to 65 years with a mean age of 35 years complaining of hip pain. The most frequently involved age group was the group > 30-40 years in both males and females.

All patients were clinically evaluated, and then subjected for radiological examination include; plain radiography ,MRI for all patients and ultrasonography for 6 patients(5 developmental dysplasia and 1 septic arthritis) .

Out of forty patients who had performed MRI were classified to: Avascular necrosis ; the commonest disease in our study; as it is seen in 12 (30%) patients, followed by; osteoarthritis in 6 (15%) patients, developmental dysplasia of the hip in 5 (12.5)patients, migratory osteoporosis in 4 (10%) patients ,septic arthritis in 4 (10%) patients, developmental dysplasia in 5 (12.5%) patients, Perthe's disease in 4 (10%) patients, slipped capital femoral epiphysis in 3 (7.5%) patients and stress fractures in 2 (5%) patients.

As all the patients were presented by painful hips. The most frequent clinical presentation following hip pain was lower back pain (N= 10, 25%), followed by limited movement (N= 8, 20%), hip joint swelling (N= 4, 10%) and constitutional symptoms (N= 2, 5%).

The final diagnosis achieved through the MRI findings were confirmed by surgical data in 6 patients with avascular necrosis, histopathology in 5 patients(3 septic arthritis and 2 osteoarthritis) and follow up by clinical, laboratory and other imaging studies in 29 patients.

The sensitivity of MRI in diagnosis of different non-neoplastic femoral head lesions was as follows: 83.3 % of patients with avascular necrosis, 83.3 % of patients with osteoarthritis, 75 % of patients with migratory osteoporosis, 75% of patients with septic arthritis, 100 % of patients with

developmental dysplasia of the hip, 75 % of patients with Perthe's disease, 66.7 % of patients with slipped capital femoral epiphysis and 100 % of patients with stress fractures, so the sensitivity of MRI in diagnosis of non-neoplastic femoral head lesions was 82.5 %.

Finally we conclude that MRI is highly sensitive imaging modality for diagnosis and characterizing of different non-neoplastic femoral head lesions and accurate for assessing the full extent of osseous, chondral and soft tissue abnormalities of the hip joint.